TECHNICAL SPECIFICATIONS

WASHINGTON STATE FERRIES

M.V. ISSAQUAH DOCKSIDE PRESERVATION

CONTRACT NO. 00-7128

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

ITEM **PAGE**

ITEM **PAGE**

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TECHNICAL SPECIFICATIONS

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to accomplish each and every Bid Item unless otherwise specified.

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to clean and gas free all spaces including any tanks, piping and reservoirs associated with the Work, as necessary, and obtain a Marine Chemist certificate for "SAFE FOR WORKERS", and "SAFE FOR HOT WORK". Maintain the certificate during the course of the Work. Provide fire watches as required.

The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle Cost modeling. Bidders should ignore such bracketed sub-titles.

1. BERTH VESSEL
{STRUCTURAL PRESERVATION}

A. **M.V. ISSAQUAH Vessel Particulars:**
Length: 328', Beam: 78'8", Draft: 16' 6", Gross Tons: 2475.

B. Berth Vessel for the work specified herein.

C. A walk through inspection of the Vessel will be conducted on the day of arrival with the WSF Inspector, Vessel Staff Chief Engineer, Vessel Staff Master and the Contractor to note the arrival condition. This inspection will be repeated prior to departure from the Contractor's facility.

2. TEMPORARY SERVICE
{STRUCTURAL PRESERVATION}

A. Install one (1) telephone on board in a location designated by the Vessel Staff Chief Engineer. The telephone is to have one (1) outside line with toll-free access to Seattle and vicinity and, if different, one (1) line for local numbers. The telephone shall have touch-tone service if available from the Contractor's telephone system.

B. Provide and maintain electricity, water, sewage removal, safe lighted gangway and trash removal services while Vessel is in the Contractor's facility.

C. Provide safety and security for the entire Vessel throughout the construction, repair or preservation period until such time as the WSF Representative has accepted re-delivery of the Vessel. Every reasonable precaution shall be taken to protect the Vessel from the hazards of fire, flooding, pilferage, malicious damage, and other events including cataclysmic phenomena of nature.

D. Provide and maintain comprehensive and effective fire prevention and fire detection, and fire fighting programs and systems sufficient to ensure the safety and integrity of the Vessel. Provide personnel trained in shipboard fire fighting techniques and also trained to cooperate with and assist local fire fighting organizations. Provide sufficient shore fire hoses to ensure an adequate supply of fire fighting water, at sufficient pressure, and maintain an adequate number of tested fire-hoses aboard the Vessel to effectively fight fires at any location in the Vessel. Provide fire temporary alarm system until dock trials.

E. Provide and maintain portable fire extinguishers in sufficient quantity, and of the appropriate type, to combat local fires of any class. Provide sufficient fire watches, including roving watches as may be required, to ensure that fires that may be inadvertently started by welding sparks or heat, electrical malfunction, or spontaneous combustion are detected, reported and promptly extinguished.

F. Provide temporary cathodic protection and submit weekly cathodic protection readings to WSF Inspector.

G. Provide portable toilet facilities with hand washing facilities in the vicinity of the Vessel gang way for the sole use of the Vessel crew, with weekly scheduled cleaning and maintenance.

H. Provide a certified non-contaminated bottle water dispenser with hot and cold taps in a location designate by the Vessel Staff Chief Engineer. Provide sealed bottles of water to the location of the dispenser; estimate five (5) gallons per day.

MARINE COATING SPECIFICATION AND COLOR SCHEME

(ATTACHMENT NO. 1)
(WSF 001)
Special Note

Area Preparation, Surface Preparation, Grit Blasting, Paint Coatings, and Inspection for Vessel's hull, curtain plates, casing and super structure shall be in accordance with Attachment No. 1, Washington State Ferries Marine Coating Specifications and Color Scheme 1/03 unless otherwise specified in the following Specifications.

ELECTRICAL INSTALLATION SPECIFICATIONS

(ATTACHMENT NO. 2)
(WSF 002)

Details of all electrical installations shall be in accordance with Attachment No. 2, WSF Electrical Installation Specifications unless otherwise specified in the following Items.

GENERAL CONSTRUCTION REQUIREMENTS

(ATTACHMENT NO. 3)
(WSF 003)

Details of all structural, mechanical and electrical installations shall be in accordance with Attachment No. 3, General Construction Requirements unless otherwise specified in the following Items.

3. INSTALLATION OF PASSENGER DECK WALK OFF MATS {MAINTENANCE}

A. Remove all interferences as required and provide secure, heated, dry storage for these Items. Restore interferences upon completion of work.

B. Remove and dispose of all the existing tile and underlayment in both No. 1 and No. 2 End Passenger Cabins adjacent to the four (4) picklefork doors extending 3 ft beyond the door frames in the athwart ships directions and 8 ft from the doors in the longitudinal direction as laid out by the WSF Inspector.

C. Prepare the decks to SSPC-SP6, Commercial Blast Cleaning with track blaster. Remove all traces of blast beads from all areas of the Vessel.

D. All areas that are inaccessible to a track blaster shall be prepared to SSPC-SP3, Power Tool Cleaning.

E. Apply two (2) coats of International Intertuf 262 Epoxy 2 mils (DFT) each to all areas prepared above.

F. Install new underlayment in all areas of removed underlayment. The new underlayment shall provide A-30 structural fire protection. The underlayment is to be asbestos free and USCG approved. The underlayment system shall be Poly-Spec 7K or equal as approved by the WSF Inspector.

1. A second coat shall smooth hollows, low spots and other imperfections in the first coat of underlayment. Where a difference in height exists in way of doors to adjacent spaces the underlayment shall transition eighteen inches (18") and be gradually ramped down to the low area. When the underlayment is sufficiently dry, sand out the trowel ridges to provide a smooth surface for tile installation. No trowel ridges shall show through the tile within one (1) year of installation.

2. Apply a full "skim coat" of PolySpec Lite Latex, or Ardex Feather Finish or an approved equal to the entire deck area being tiled. The skim coat shall provide a level and smooth surface for tile application. The Contractor shall warrant that the skim coat will not de-laminate from the underlayment, crack, or bubble during the warranty period. All or equal substitutions shall be approved by the WSF Inspector. The finished deck surface shall be flush with all doorsills and faired to account for deck camber.

3. Coat underlayment under walk off mats and for one (1) tile width around the perimeter with epoxy sealer to make the underlayment waterproof.

G. The walk off mat shall be sized to extending 2 ft beyond the door frames in the athwartships directions and 6 ft from the doors in the longitudinal direction as laid out by the WSF Inspector.

1. The walk off mats shall be Bonar Floors Coral Duo-Graphite 9110.

2. The mats shall be flush with the existing tile and be laid with the ribs running at right angles to the walking direction.

3. The mats shall be removable.

4. Install walk off mat stainless steel transition strips with removable rubber flat top flush with the existing tile and capturing the outer perimeter of the mats.

5. Install new tile to match existing to all areas that were disturbed and that have not received a walk off mat.

4. REPLACE DRINKING FOUNTAIN {ADA}

A. Remove and dispose of the existing drinking fountain, port side, frame 6 and replace it with a new Halsey Taylor Model HAC8FS-Q Stainless Steel drinking fountain. The rim height shall be located 32 ⅝" above the deck covering. Modify the bulkhead support, supply and drain height as required for new installation.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Remove the drinking fountain on the starboard side, frame 12. This fixture shall not be replaced. Remove piping back to the supply main, electrical cable back to the supply end and remove the drain and vent back to next common service. Insert the deck and bulkhead in areas of removed piping.

D. Cleaning and disinfecting shall be accomplished in accordance with current Federal and State Regulations.

5. AUTOMATIC DRAFT INDICATION SYSTEM INSTALLATION (ADIS) {NAVIGATION EQUIPMENT}

NOTE:

Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

A. Install the WSF furnished Automatic Draft Indication System as indicated on **, DWG 8301-607-095-01,** MV ISSAQUAH Automatic Draft Indication System Electrical Installation and **WSF DWG 8301-607-002-01,** MV ISSAQUAH Automatic Draft Indication System Hull Installation and this Specification.

B. Remove and reinstall all interferences necessary to complete this Item.

C. All new steel will be prepared to an SSPC-SP 10, Near White Blast Cleaning. Existing paint surfaces affected by this work will be prepared to a SSPC-3, Power Tool Cleaning.

D. Fabricate and install transceiver support tubes, cable guards and junction boxes in accordance with **WSF DWG 8301-607-002-01,** MV ISSAQUAH Automatic Draft Indication System Hull Installation.

E. Install four (4) WSF furnished ultrasonic transducers and mounting hardware, in accordance with **WSF DWG 8301-607-002-01,** MV ISSAQUAH Automatic Draft Indication System Hull Installation.

F. Within the first three (3) days of Vessel arrival, provide WSF Inspector with the exact length of Transceivers Support Pipe's that will be installed through the "guard".

G. Install one (1) WSF furnished pilothouse display unit in each pilothouse in accordance with **WSF DWG 8301-607-095-01,** MV ISSAQUAH Automatic Draft Indication System Electrical Installation. Install one (1) WSF furnished system central processing unit in pilothouse Number 1 in accordance with **WSF DWG 8301-607-095-01,** MV ISSAQUAH Automatic Draft Indication System Electrical Installation. Install one (1) WSF furnished draft indicator system printer on the chart table in pilothouse Number 1 as designated by the WSF Inspector.

H. Install black phenolic nameplates with white lettering on all electrical enclosures and "J" boxes. Lettering shall be at least ⅜ inch high.

I. Install and terminate all interconnecting cables, breakers, and other electrical hardware in accordance with **WSF DWG 8301-607-095-01,** MV ISSAQUAH Automatic Draft Indication System Electrical Installation. Band, megger, and tag the cable in accordance with **Attachment No. 2,** WSF 002 Electrical Installation Specifications.

J. After equipment installation is complete, the Contractor shall obtain the services of Weir-Jones Engineering Ltd, the equipment vendor, to accomplish system startup/commissioning, and necessary calibrations. This shall be witnessed by the WSF Construction Master.

K. Conduct a satisfactory operational test to the satisfaction of the Weir-Jones Engineering LTD, the Vendor Representative and the WSF and USCG Inspectors. Provide the WSF Inspector with three (3) written copies of the test results.

L. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of Hempel, Hempadur epoxy 45881-1163, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Hempel, Hempathane 5595U, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

6. RELOCATE MISCELLANEOUS ANTENNAS {NAVIGATION EQUIPMENT}

A. Remove and reinstall all interferences including but not limited to the pilot house false overhead, electrical cables and pilot house overhead insulation.

B. Remove antennas that are no longer used as shown on **WSF DWG 8301-661-094-02,** M/V ISSAQUAH Antenna Ripout and Relocation. Removal shall include the antennas, cables, and foundations. All unused penetrations shall be capped or removed and inserted.

C. Relocate antennas as shown on **WSF DWG 8301-661-094-02,** M/V ISSAQUAH Antenna Ripout and Relocation. Relocation shall include the removal of the existing antennas, foundations, and cables. Removed antennas shall be removed and turned over to the WSF Inspector. Reinstall the antennas as shown on **WSF DWG 8301-661-094-02,** M/V ISSAQUAH Antenna Ripout and Relocation and **WSF DWG 8301-661-094-01,** M/V ISSAQUAH Antenna Arrangement. Install new penetrations, foundations, wireways and cables from the relocated antennas to the existing equipment they service.

D. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of Hempel, Hempadur epoxy 45881-1163, Off White, to obtain a minimum of 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Hempel, Hempathane 5595U, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

E. Replace all disturbed structural, thermal, and acoustical insulation to match original installation. Repair all interior finish coatings and linings damaged by the Work to match original finish and treatment.

7. PILOTHOUSE 24VOLT DC SYSTEM MODIFICATONS {NAVIGATION EQUIPMENT}

A. Modify the existing 24 volt DC System for Pilot Houses No.1 & No. 2 as shown on **WSF DWG 8301-554-090-01,** M/V ISSAQUAH Pilothouse 24 VDC Distribution System Modifications, **WSF DWG 8301-668-095-02,** M/V Issaquah Indicator and Alarm System Elementary Wiring Diagram and this Specification.

B. Remove and reinstall all interferences necessary to complete this Item including but not limited to insulation, vent ducting, piping and wire ways.

C. Temporarily remove 24VDC power panels DC24-1 and DC24-2 from their existing foundation. Remove the existing foundations and install new fiddle boards to allow the installation of the existing power panels, new panels and equipment as shown on **WSF DWG 8301-554-090-01.** The fiddle board shall be constructed of 3/16 plate and adequately support from the deck to the overhead.

D. Reinstall the previously removed 24 VDC power panels on the new fiddle board.

E. Modify the existing 24VDC power panels DC24-1 and DC24-2 located in the pilothouse fan spaces as shown in **WSF DWG 8301-554-090-01.**

F. Install new power panels and equipment as shown on **WSF DWG 8301-554-090-01,** on the new fiddle boards.

G. Install new ground detection systems as shown in **WSF DWG 8301-554-090-01.**

H. Install the new battery charger alarm systems for the existing 24 volt DC Battery Chargers as shown in **WSF DWG 8301-554-090-01** and **WSF DWG 8301-668-095-02.**

I. Modify the existing Rochester Instruments alarm module in EOS as shown in **WSF DWG 8301-668-095-02.**

J. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

K. Replace all disturbed structural, thermal, and acoustical insulation to match original installation repair all interior finish coatings and linings damaged by the Work to match original finish and treatment.

8. INSTALL DECK HOUSE EXTENSION {SECURITY}

A. Install a new electronic equipment enclosure shown on **WSF DWG 8301-639-003-01,** M/V ISSAQUAH Electronic Equipment Room Structural Arrangement and Details, **WSF DWG 8301-668-012-03**, M/V ISSAQUAH Electronic Equipment Room Ventilation Arrangement and Details and **WSF DWG 8301-639-090-01**, M/V ISSAQUAH Electronic Equipment Room Electrical Installation Navigation/Bridge Deck, No. 2 End and this Specification.

B. Electrical installation for the new enclosure shall be in accordance with **WSF DWG 8301-639-090-01.**

C. Remove and reinstall all interferences necessary to complete this Item, including but not limited to, insulation, bulkhead panels and overhead panels.

D. Relocate the existing access ladder to the deckhouse top including the safety lines from its present location on the crews quarters aft bulkhead to the opposite side of the crews quarters aft bulkhead as directed by the WSF Inspector.

E. Provide one (1) new Pacific Coast Marine 30 x 81 weather tight access door as shown on **WSF DWG 8301-639-003-01,** M/V ISSAQUAH Electronic Equipment Room Structural Arrangement and Details and shall be prepared to accept a Best Access Systems Cylinder Lock using Best Access Systems Template Number W13, Rev B.

F. Install a WSF furnished 15 lbs U.S. Coast Guard Approved CO2 fire extinguisher in the Electronic Equipment Room in a location designated by the WSF Inspector.

G. Install the ventilation system for the Electronic Equipment Room as shown on **WSF DWG 8301-668-012-03**, M/V ISSAQUAH Electronic Equipment Room Ventilation Arrangement and Details.

H. Install two inch (2") thick vinyl covered USCG approved hull board insulation on insulation pins, nine inches (9") on center, to the overhead and exterior bulkheads. Place one inch (1") thick vinyl covered USCG approved insulation around all stiffeners. Tape all joints. Weld a two inch (2") high bounding bar to the deck edge.

I. Replace all disturbed structural, thermal, and acoustical insulation to match original installation.

J. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply two (2) coats of Hempel, Hempadur epoxy 45881-1163, Off White, to obtain a minimum of, 3mils (DFT) each to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Hempel, Hempathane 5595U, 2-4 mils DFT, to cover, on exterior surfaces with the exception of the house top which shall be top coated with American Safety non-skid to match the existing house top. Color same as existing one.

9. SECURITY SYSTEM INSTALLATION
{SECURITY}

A. Install security modifications shown on **WSF DWG 8301-639-005-01,**M/V ISSAQUAH Pilothouse Security Modifications, **WSF DWG 8301-668-090-01,** M/V ISSAQUAH Electrical One-Line Diagram, **WSF DWG 8301-639-095-01,** M/V ISSAQUAH Homeland Security Plan, **WSF DWG 8000-639-095-01,** All Vessels Homeland Security Typical Wiring Diagram Standard, **WSF DWG 8301-639-095-02,** M/V ISSAQUAH Homeland Security Cabling & Wiring Diagram, and **WSF DWG 8000-639-095-02,** All Vessels Homeland Security Plan Typical Foundations Standard.

NOTE:

WSF supplied Items on **WSF DWG 8301-639-095-02**.

NOTE:

Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

B. Remove and reinstall all interferences necessary to complete this Item, including but not limited to, insulation, bulkhead panels and overhead panels.

C. Fabricate new access enclosures to the pilothouse as shown on **WSF DWG 8301-639-005-01.**

D. Fabricate equipment cabinet and electronic security devices foundations and camera mounts in the locations shown on **WSF DWG 8301-639-095-01** and **WSF DWG 8000-639-095-02.**

E. Add ground detection as indicated on **WSF DWG 8301-668-090-01** and **WSF DWG 8301-585-089-02**.

F. Install new cables required by **WSF DWG 8301-668-090-01**, **WSF DWG 8301-639-095-01, WSF DWG 8000-639-095-01 and DWG 8301-639-095-02**. Insure cables and wires installed by this Item are run and marked, and continuity tests are made in accordance with **Attachment No. 3,** WSF 003 General Construction Requirements. Prior to installing any fiber optic cables perform an OTDR test and submit results to the WSF Inspector. Perform a second OTDR on the fiber cables after installation. Compare the results to the pretest and submit results to the WSF Inspector.

G. The Contractor shall obtain the services of ABSCO Alarms (206) 367-1166 to make all connections and demonstrate the operation of the system.

H. Install stud runs and penetrations, run cables and install the security hardware and electrical components.

I. Replace all disturbed structural, thermal, and acoustical insulation to match original installation.

J. Fabricate a security door similar to pilothouse access cage doors at each of the two (2) lube oil stations on the lower car deck. Frame work shall be 1¼" sch 40 galvanized steel pipe. Screen shall be ⅛" by 1" 316 stainless steel screen. Install a hasp for a padlock.

K. Prepare all interior surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat International Intertuf 262, Buff to a minimum to obtain 6 to 8 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Intercare 755, to a minimum of 2 mils (DFT) to match surrounding.

L. Prepare all exterior surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat Hempel, Hempadur epoxy 45881-1163, Off White, to obtain a minimum of, 3mils (DFT) each to all prepared surfaces. Hand stripe all edges, Top-coat with Hempel, Hempathane 5595U, 2-4 mils DFT, to cover. Color same as existing one.

10. ADA/UNISEX RESTROOM INSTALLATION {ADA}

A. Install a new unisex restroom on the main vehicle deck as shown on **WSF DWG 8301-668-003-02,** M/V ISSAQUAH Lower Vehicle Deck Unisex Head Arrangement and Details, **WSF DWG 8301-668-090-01**, M/V ISSAQUAH Electrical One-Line Diagram, **WSF DWG 8301-668-011-01** M/V ISSAQUAH Lower Vehicle Deck Unisex Head Drains Arrangement, **WSF DWG 8301-668-012-02,** M/V ISSAQUAH Lower Vehicle Deck Unisex Head Ventilation Arrangement & Details, **WSF DWG 8301-668-059-01,** M/V ISSAQUAH Lower Vehicle Deck Unisex Head Fresh Water Arrangement, **WSF DWG 8301-668-090-02,** M/V ISSAQUAH Lower Vehicle Deck ADA/Unisex Head Electrical Installation.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Relocate the Anchor hawse pipe and anchor pelican hook remote release as shown on **WSF DWG 8301-668-003-02.**

D. Relocate fire sprinkler nozzle and piping as shown on **WSF DWG 8301-668-003-02.**

E. Install new Public address system speaker in the Unisex Head.

F. Install new General Alarm bell in the Unisex Head.

G. Install a new compartment on lower vehicle deck as shown on **WSF DWG 8301-668-003-02.**

H. Install two inch (2") thick vinyl covered USCG approved hull board insulation on insulation pins, nine inches (9") on center, to the overhead and exterior bulkheads. Place one inch (1") thick vinyl covered USCG approved insulation around all stiffeners. Tape all joints. Weld a two-inch (2") high bounding bar to the deck edge.

I. Install new non-ACM bulkhead paneling, similar to WILSONART plastic laminate D30-60, color to be selected by the Vessel Construction Master on the interior as shown on **WSF DWG 8301-668-003-02**.

J. Install new ceiling as shown on **WSF DWG 8301-668-003-02**, color to be selected by the Vessel Construction Master.

K. Install all new fittings and equipment as shown on **WSF DWG 8301-668-003-02**.

L. Connect the new toilet and sink to the Vessel existing plumbing and drain systems as shown on **WSF DWG 8301-668-059-01** and **WSF DWG 8301-668-011-01**. Extend all new piping into the new space using water and fire tight bulkhead sleeves as shown in **WSF DWG 8301-668-059-01.**

M. Install new paper towel dispensers, toilet paper, mirror, fold down infant care station, toilet seat cover dispenser, grab rails, sanitary napkin dispenser, folding utility shelf, coat hook, child protective seat and liquid soap dispensers as shown on **WSF DWG 8301-668-003-02**.

N. Install new ventilation as systems as shown on **WSF DWG 8301-668-012-02**.

O. Install new underlayment and deck covering as shown on **WSF DWG 8301-668-003-02.**

P. Install new Door with power assist as shown on **WSF DWG 8301-668-003-02**, **WSF DWG 8301-668-090-01,** and **WSF DWG 8301-668-090-02**.

Q. Provide new equipment and wiring to install lighting new fluorescent fixtures with Magnetek Triad B232I120RH ballasts and Phillips TL80 rapid start F32 T8/TL 841 4100K tubes, outlets, hand dryer, electronic flushing valves, and electrical panel. In the Electrical Equipment Room End No. 1 install a new power distribution panel L9, dedicated to Unisex head electrical load. New circuits are shown on **WSF DWG 8301-668-090-01** and **WSF DWG 8301-668-090-02.** Provide cables, wireways, MCT's and junction boxes to complete the installation**.**

R. Prepare all interior surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat International Intertuf 262, Buff to a minimum to obtain 6 to 8 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Intercare 755, to a minimum of 2 mils (DFT) to match the No. 2 End Upper Passenger Cabin.

S. Prepare all exterior surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat Hempel, Hempadur epoxy 45881-1163, Off White, to obtain a minimum of, 3mils (DFT) each to all prepared surfaces. Hand stripe all edges, Top-coat with Hempel, Hempathane 5595U, 2-4 mils DFT, to cover. Color same as existing one. Final top coat shall be applied in conjunction with the application of the final coat in Items 25 and 26.

T. TESTING

1. Conduct a water test on the new exterior bulkheads and overhead. No leakage is allowed.

2. Hydro all new pipe to 150 % of working pressure.

3. Testing of the electrical installation will be covered under the control system.

11. LOCAL AREA NETWORK INSTALLATION {IT}

A. Install new fiber optics, LAN and antennas as shown on **WSF DWG 8301-642-095-01,** M/V ISSAQUAH Super-LAN/Security & Surveillance/ Wireless Over Water Installation, **WSF DWG 8301-661-094-01,** M/V ISSAQUAH Antenna Arrangement, and **WSG DWG 8301-668-090-01,** M/V ISSAQUAH Electrical One Line Diagram. Develop cable routing for the fiber optic and Cat 5E cables.

NOTE:

Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused. New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

B. Remove and reinstall all interferences necessary to complete this Item, including but not limited to, insulation, bulkhead panels and overhead panels.

C. Prior to installing any fiber optic cables perform an OTDR test and submit results to the WSF Inspector. Install new cables required by **WSF DWG 8301-642-095-01.** Insure cables and wires installed by this Item are run and marked, and continuity tests are made in accordance with **Attachment No. 3,** WSF 003 General Construction Requirements. Perform a second OTDR on the fiber cables after installation. Compare the results to the pretest and submit results to the WSF Inspector.

D. Provide and install cable and power to the UPS's from the distribution panels. Cable shall be terminated as a standard duplex outlet.

E. Replace Lighting Panels L1 and L2 in the No. 1 and No. 2 Pilot Houses as shown on **WSF DWG 8301-668-090-01** and **WSF DWG 8301-668-090-02.**

F. Install foundations and antennas as required on **WSF DWG 8301-642-095-01**, welding shall be in accordance with **Attachment No. 3**, WSF 003 General Construction Requirements. Foundations shall be installed for all Items identified as Owner Furnished Equipment (OFE) 2 and 3 on **WSF DWG 8301-642-095-01**.

G. Install coax from the radio enclosures to the antenna foundations. Terminate and end seal spare lengths of cable.

H. Contractor shall provide the services of Netversant to mount the equipment, perform final terminations and system check out of the Contractor provide equipment.

I. Prepare all interior surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

J. Prepare all exterior surfaces affected by this work to an SSPC-SP 3, Power Tool Cleaning. Coat with one (1) coat of Hempel, Hempadur epoxy 45881-1163, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Hempel, Hempathane 5595U, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

12. CELLULAR TELEPHONE INSTALLATION
{IT}

A. Install new Cellular Telephone System as shown on **WSF DWG 8301-642-095-02,** M/V ISSAQUAH Cellular Phone Installation, **WSF DWG 8301-668-090-01,** M/V ISSAQUAH Electrical One –Line Diagram and **WSF DWG 8301-661-094-01,** M/V ISSAQUAH Antenna Arrangement. Develop cable routing for the Cat 5E cables.

NOTE:

Wherever new penetrations are required they shall maintain the watertight and fire ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and deck penetrations may be reused. New Multi-Cable Transits shall be Nelson type. Test all deck, bulkhead and hull penetrations in company with and to the satisfaction of the USCG and WSF Inspector, and the Staff Chief Engineer.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Install new cables required by **WSF DWG 8301-642-095-02.** Insure cables and wires installed by this Item are run and marked, and continuity tests are made in accordance with **Attachment No. 3,** WSF 003 General Construction Requirements.

D. Remove all equipment from the existing Cell Phone enclosure as Category "A" and return to the WSF Inspector. Existing cables feed to EOS shall be retained in accordance with **WSF DWG 8301-642-095-02.**

E. Install foundations and enclosures in accordance with on **WSF DWG 8301-642-095-02**, welding shall be in accordance with **Attachment No. 3,** WSF 003 General Construction Requirements**.**

F. Remove existing antennas; install new antenna foundations and antennas in accordance with **WSF DWG 8301-661-094-01**.

G. Items 18 – 22 of the material list on **WSF DWG 8301-642-095-02** shall be provided to the WSF Inspector.

H. WSF will provide the services of a WSF Contractor to mount the equipment, perform final terminations and system check out.

I. Prepare all interior surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

J. Prepare all exterior surfaces affected by this work to an SSPC-SP 3, Power Tool Cleaning. Coat with one (1) coat of Hempel, Hempadur epoxy 45881-1163, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Hempel, Hempathane 5595U, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

13. CPP HYDRAULIC SYSTEM VIBRATION ISOLATION {NOISE CONTROL}

A. Remove and reinstall all interferences as necessary to complete the work.

NOTE:

This upgrade applies to both CPP Systems located in End No. 1 and End No. 2 Reduction Gear Rooms.

B. Remove valves, pipes and hoses in accordance with **WSF DWG 8300-662-053-01** ISSAQUAH CLASS CPP Hydraulic Power Supply Vibration Isolation.

C. Remove existing pumps from the existing motors as shown on **WSF DWG 8300-662-053-01** and drain and hard blank all openings and turn over to the Vessel Staff Chief Engineer.

D. Install new pumps onto the existing motors using new hardware as shown on **WSF DWG 8300-662-053-01** this will require the removal, clocking 90 degrees and reinstallation of the of the motor to pump adapter to ensure that pump inlet and outlet ports are parallel to the foundation. The motor shaft may require hand grinding to shorten the shaft approximately ¼" inch.

E. Remove existing pump motor foundations and fabricate and install new foundations as shown on **WSF DWG 8300-662-053-01.**

F. Install new hoses, pipes and fittings in accordance with **WSF DWG 8300-662-053-01**.

G. Reinstall existing equipment as shown on **WSF DWG 8300-662-053-01** using new gaskets, o-rings, seals and fasteners.

H. Modify deck plates as necessary to restore them to their existing condition.

I. Clean by acid pickling internal surfaces of newly fabricated hydraulic fluid piping and then oil to prevent corrosion. After piping systems have been pickled and oiled, all open ends shall be sealed tight using metal or plastic caps, plugs and blanks.

J. Clean and flush all new and existing system piping, tubing, and appurtenances through 10 Micron Filter Cartridge(s) to meet the Class 8 requirements of NAS 1638 (see TABLE 8-1 below for particulate contamination). All associated equipment shall be thoroughly cleaned after fabrication and prior to installation in the Vessel. After installation, each new or modified system shall be thoroughly cleaned and flushed of all foreign material utilizing the normal system medium or a WSF approved substitute. When an acceptable level of cleanliness has been obtained, the flush has been secured, and the system has cooled down; remove the flushing oil from the system.

TABLE 8-1

Maximum Contamination Limits Per 100 Milliliters (Class 8)

PARTICLE SIZE RANGE (MICRONS)	MAXIMUM NUMBER OF PARTICLES PER RANGE
5 to 15	64,000
15 to 25	11,400
25 to 50	2,025
50 to 100	360
Over 100	64

K. Hydrostatically test the system as shown on **WSF DWG 8300-662-053-01.**

L. Refill the system to its normal operating level with new WSF provided hydraulic oil, filtered through a 10-micron filter. Ensure all trapped air is bled from the system.

M. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

N. Prior to the Vessel departing conduct an operational test of the system during Dock trials. WSF will conduct sea trials upon departure from the Contractor's facility.

14. ENGINE ROOM ACOUSTIC ENCLOSURE
{NOISE CONTROL}

A. Remove and reinstall all interferences necessary to complete this Item, including but not limited to, Insulation, bulkhead panels and overhead panels.

B. Fabricate and install a sound-proofed enclosure for the crew to access the engineer's day room from the engine room as shown on **WSF DWG 8301-583-007-01** MV ISSAQUAH, Acoustic Enclosure in Way of the Engineer's Day Room / ER No. 1 Arrangement and Details. The boundary between the new enclosure and the engine room shall be constructed to B-15 fire rating.

C. The new steel structure shall consist of the following components:

1. A new structural frame to contain and support the new acoustical panels with structural supports below. Existing vertical grating supports shall be used where possible to avoid welding on the tank top.

2. A new deck section to support the new floating deck of the enclosure.

D. Provide and erect temporary protection for all equipment in the engine rooms that may be contaminated or damaged during this work. The protection shall include, but not be limited to, fabric and temporary wooden structures. No parts of any existing equipment are to be used as footholds or supports for personnel during this work. After the completion of the installation, remove all temporary protections and restore the work areas to their original condition.

E. The Contractor may temporarily remove existing equipment, fixtures, piping and electrical cables in order to carry out the work. Reinstall all temporarily removed Items to their original location. All Items that may interfere with or be damaged by the work to be performed shall be protected or removed and reinstalled. These Items may include, but are not limited to, piping, insulation, ceiling panels, light fixtures, cableways and bulkhead-mounted equipment inside the engine room, and Day Room. Temporarily removed Items shall be reinstalled by the same method to their previous location. Equipment damaged in the removal process shall be repaired, replaced or restored to original condition.

F. Modify and/or relocate the existing inclined ladder between the dayroom deck and the engine room floor plate level to suit the new arrangement, as shown in **WSF DWG 8301-583-007-01**. Provide new pad eyes and deck reinforcements for the inclined ladder at its new location. Modify the handrails to fit the new enclosure.

G. Remove the existing engine room floor-plate and associated supports in the area of the new enclosure. Relocate one (1) existing light fixture in way of the new enclosure and install one (1) additional light fixture, one (1) on the exterior of the enclosure and one (1) inside to be fed from nearest junction box from circuit 6EL5.

H. Relocate the existing carbon dioxide, fuel oil piping lines piping and control air line in way of the new enclosure to a location just above the enclosure.

I. Provide and install new joiner work inside the new enclosure as shown in **WSF DWG 8301-583-007-01**. The joiner systems shall be installed per manufacturers' recommended details. In particular, the interface between the joiner ceiling and joiner lining is critical to the overall sound attenuation. The new joiner lining shall be Norac C-600-50 mm, or equal, with a B-15 fire rating and 42-db sound reduction rating.

J. Provide new joiner ceiling inside the new enclosure. The new joiner ceiling shall be compatible with the bulkhead panels with a B-15 fire rating and 42 db sound reduction rating.

K. Provide an A-60 floating floor on top of the new platform as shown in **WSF DWG 8301-583-007-01**. The floating floor shall be Norac F-300, or equal, with an A-60 rating. The floating floor shall be made of panels that are 1970 mm by 300 mm, tack-welded on ten inch (10") centers. The top surface of the panels shall be 3 mm galvanized steel sheets. The seams in the floating floor shall be caulked and gray dielectric matting installed.

L. Provide an acoustical door in the inboard bulkhead of the new enclosure. The door shall be an A-60 weather-tight door as manufactured by McGeoch Marine Limited. This manufacturer is specified due to superior acoustic properties of the product. Equal acoustic performance shall be demonstrated for any proposed equal. The door shall be fitted with gaskets and a closure device. The leaf of the new door shall swing into the enclosure. Provide hinges Lawrence #8881151-32-D heavy-duty ball bearing 4½x 4½. Provide lockset Best 34H-14J626-mortise type. Provide door closer LCM Model 4041.

M. Modify the existing inboard surface of the engine room day room to accept the new enclosure. The existing insulation contains lead sheathing. Portions of this insulation are to be removed to allow structural fit-up and welding. The remaining insulation shall be preserved. Upon completion of the installation the bulkhead shall be repaired to original condition. All material and workmanship shall comply with the U.S. Coast Guard requirements. Furnish all necessary documentation to demonstrate such compliance.

N. Modify the floor plates and associated supports in the engine room to suit the new enclosure.

O. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

15. ENGINE CONTROL ROOM VENTILATION MODIFICATIONS {MAINTENANCE}

A. Modify the Engine Control Room Ventilation as shown on **WSF DWG 8301-668-012-04,** MV ISSAQUAH EOS Ventilation Modification Arrangement and Details.

B. Remove and reinstall all interferences necessary to complete this Item, including but not limited to, Insulation, overhead panels, piping, "J" boxes and wireways. Relocate these Items as necessary to a location designated by the WSF Staff Chief Engineer.

C. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

16. CONTROL SYSTEM INDICATOR AND ALARMS SYSTEM MODIFICATIONS {MAJOR MECHANICAL}

A. Modify the existing Alarm and Indicating System as shown on **WSF DWG 8301-668-095-02** M/V ISSAQUAH Indicator, Alarm System Elementary Wiring Diagram, **WSF DWG 8301-668-090-01,** M/V ISSAQUAH Electrical One-Line Diagram and this Specification.

B. Remove and reinstall all interferences as necessary to complete the work.

C. Install new Siemens Universal Logic Module as shown in **WSF DWG 8301-668-095-02**, the location of the Module in EOS Console will be as directed by the Vessel Staff Chief Engineer. The Contractor shall provide the services of an authorized representative to program the controller upon completion of installation.

D. Install all necessary equipment and cabling as shown in **WSF DWG 8301-668-095-02**.

E. Remove relays K1 & K3 from the NO1 Pilot House Control Console and relays K2 & K4 from the NO 2 Pilot House Control Console as shown in **WSF DWG 8301-668-095-02** and return to the Vessel Staff Chief Engineer.

F. Reconnect the Alarm Silence Pushbutton, Sonoalert, and PLC Fail/Control Voltage Low Alarm Indicator Light in both pilot house consoles as shown in **WSF DWG 8301-668-095-02**. Test all alarms to insure correct operation.

G. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

17. 24 VDC POWER SUPPLY SYSTEM MODIFICATIONS
{MAJOR MECHANICAL}

A. Remove existing I.C. Battery Charging System and PCS Battery Charging System including batteries and their foundations as shown on **WSF DWG 8301-585-096-11,** M/V ISSAQUAH IC. & PCS Battery Systems Rip Out and **WSF DWG 8301-668-090-01,** M/V ISSAQUAH Electrical one-Line Diagram. Remove unused alarm circuits as directed in **WSF DWG 8301-668-095-02,** M/V ISSAQUAH Indicator and Alarm System Elementary Wiring Diagram and this Specification.

B. In Engine Room Diesel Control Power Supply System remove existing batteries, disconnect switches and cables as shown on **WSF DWG 8301-585-095-12,** M/V ISSAQUAH Diesel Control Power Supply Systems installation Rip Out in preparation for modifications to the 24 VDC power supply system.

C. Remove and reinstall all interferences necessary to complete this Item including but not limited to insulation, vent ducting, piping, MCT's and wire ways.

D. Modify the existing Diesel Control Power Supply system by providing new material and make installation changes as directed in **WSF DWG 8301-668-096-01,** M/V ISSAQUAH Engine Room 24 VDC Power Supply System Installation. Rename existing Diesel Control Power Supply system to Engine Room 24 VDC Power Supply System and provide new label plates as shown on **WSF DWG 8301-668-096-01**. Provide new panel directories with updated circuits.

E. Remove the existing IC and PCS Battery Chargers and turn them over to the Staff Chief Engineer as directed in **WSF DWG 8301-585-096-11** M/V ISSAQUAH, I.C. & PCS Battery Systems Rip Out.

F. Remove and properly dispose of the existing lead acid batteries, install new batteries of larger capacity using new interconnect cables as shown on **WSF DWG 8301-668-096-01.**

G. Provide new suitable foundations for the new battery boxes and incorporate tie down straps to allow for battery maintenance.

H. For Engine Room existing battery chargers, readjust the Float/Boost and alarm settings for the new gel type batteries. Contact SENS Stored Energy Systems manufacturer for resetting procedure or service. Provide WSF with a report on the new settings.

I. In the EOS provide new foundation for the new C-IC2 panel in the location of the removed panel. Modify cable runs to suit new panel entry.

J. Modify new panel C-IC2 to install relocated voltmeter and new equipment as shown on **WSF DWG 8301-668-096-01**.

K. In the Ships Service Switchboard install a new 24 VDC battery voltage indication system as shown in **WSF DWG 8301-585-089-02** and **WSF DWG 8301-585-089-03**. Use existing meter and indication lights as directed.

L. Replace the existing I-line circuit breaker and feeder cable VP410 for panel VP2 in the Ships Service Switchboard as shown on **WSF DWG 8301-585-095-12** and **WSF DWG 8301-668-089-01.**

M. Correct existing alarm systems wiring for the removed Battery Chargers as shown **WSF DWG 8301-668-095-02.**

N. Modify the existing Rochester Instruments (RIS) alarm module in EOS as shown in **WSF DWG 8301-668-095-02.**

O. Repair all paint damaged by this work to match the existing coating.

P. Replace all disturbed structural, thermal, and acoustical insulation to match original installation. Repair all interior finish coatings and linings damaged by the Work to match original finish and treatment.

18. REDUCTION GEAR ROOM VENTILATION INSTALLATION {MAINTENANCE}

A. Install two (2) new supply ducts and two (2) exhaust fans for the No. 1 and No. 2 reduction gear rooms, as shown on **WSF DWG 8301-668-012-01,** Reduction Gear Room Ventilation Arrangement and Details and **WSF DWG 8301-668-091-01,** M/V ISSAQUAH Reduction Gear Room Vent Fan Motor Controller Wiring Diagram.

B. Remove and reinstall all interferences necessary to complete this Item including but not limited to insulation, vent ducting, piping, MCT's and wire ways.

C. Install two (2) new supply ducts running from the curtain plate exterior across the overhead of the lower vehicle deck and into the machinery casing. Existing fire dampers and thru deck ducts will remain without modification. Provide and install filter racks, filters, and A-15 Class outward swinging fire doors similar to doors 6 and 7 shown on **WSF DWG 8301-668-012-01**. Remove the existing louvers and insert the openings. Note that penetrations are required in the new supply duct for sprinkler system piping. Provide take down joints in existing sprinkler piping to facilitate new supply duct installation. Test take down joints for tightness.

D. Install two (2) new exhaust systems consisting of new fans, deck penetration spools, and bell mouths. Relocate and reuse the existing fire dampers and remote operators, damper transitions, and diffusers. Provide new filter housings, frames and filters. Existing louvers will remain without modification. Note that there is an existing door to plenums as shown on **WSF DWG 8301-668-012-01** and **WSF DWG 8301-668-091-01.**

E. Provide electrical cables, wireways, penetrations, circuit breakers, distribution boxes, terminal blocks, motor starters, disconnect switches, pushbutton switches/indicator lights and legends as shown on **WSF DWG 8301-668-091-01**. Mount the new motor controllers and disconnect switches in the location selected by the Vessel Staff Chief Engineer. New penetrations shall maintain the watertight and fire ratings of the boundaries penetrated. In the event new MCT's need be installed they shall be NELSON RGS-6 MCT's. Sketches for all new structural penetrations will be provided to the WSF Inspector for approval. No new structural penetrations will be made without prior approval of WSF. All new penetrations will be tested to the satisfaction to the USCG Representative and WSF Inspector.

F. Install new remote control panel in the EOS for the remote controls for the Reduction Gear Rooms and Tank Rooms ventilation in the location designated by the Vessel Staff Chief Engineer.

G. Relocate tool board in Engine Room No. 1 to a location designated by the WSF Vessel Staff Chief Engineer. Provide labor, material and equipment to relocate ¾" fuel oil pump drain tank vent line in Engine Room No. 2 to permit the installation of new electrical distribution boxes.

H. Prepare all interior surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

I. Prepare all exterior surfaces affected by this work to an SSPC-SP 3, Power Tool Cleaning. Coat with one (1) coat of Hempel, Hempadur epoxy 45881-1163, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Hand stripe all edges. Apply a topcoat of Hempel, Hempathane 5595U, 2-4 mils DFT, to cover, on all surfaces. Color same as existing one.

19. SHORE POWER UPGRADE

{MAJOR MECHANICAL}

A. Modify the Shore Power System and Ships Service Switchboard as shown on **WSF DWG 8301-668-089-01,** M/V ISSAQUAH Shore Power Block Diagram, **WSF DWG 8301-585-089-03,** M/V ISSAQUAH Generators Semi-Manual Paralleling System Connection Diagram, **WSF DWG 8301-585-089-04,** M/V ISSAQUAH Switchboard Control Wiring Diagram, **WSF DWG 8301-585-089-02,** M/V ISSAQUAH Ship Service Switchboard Arrangement, and **WSF DWG 8301-668-095-02,** M/V ISSAQUAH Indicator and Alarm System Elementary Wiring Diagram.

B. Remove and reinstall all interferences necessary to complete this Item.

C. Remove existing shore power system as shown on **WSF DWG 8301-668-089-01**.

D. Install a new shore power circuit breaker including all necessary cable as shown in **WSF DWG 8301-585-089-03**, **WSF DWG 8301-585-089-02**, and **WSF DWG 8301-668-089-02**. The breaker shall have copper lugs capable of receiving a 4/0 cable per phase and shall be rated to operate in a 40º C ambient environment. The breaker shall be installed in the same location as the existing 150 Amp breaker having a compatible mounting style (plug-on or bolt-on). Remove the existing Kirk Key from the existing circuit breaker and plug the holes. During testing, the magnetic trip shall be set at the lowest possible level while still being able to start the Fire and Sprinkling Pumps. Once this setting has been achieved and observed by the WSF Representative, the adjustment screws shall be painted over to provide a tamper seal. Record the final settings and submit them to the WSF Representative.

E. In the ship service switchboard replace the Shore Power Amp Meter as shown on **WSF DWG 8301-585-089-03** and **WSF DWG 8301-668-089-01**.

F. Modify the alarm system as shown in **WSF DWG 8301-668-095-02.**

G. Install indicator lights as shown in **WSF DWG 8301-585-089-03, WSF DWG 8301-585-089-02,** and **WSF DWG 8301-585-089-02**.

H. Install three (3) corrected label plate, red phenolic with white core, containing instructions as to not to draw out breakers at each breaker as shown in **WSF DWG 8301-585-089-02.**

I. Install new label plates and shore power transfer instructions as shown in **WSF DWG 8301-585-089-02.**

J. Prepare new and disturbed areas in way of this work to an SSPC-SP 3, power tool cleaning. Coat with one (1) coat of INTERNATIONAL Intertuf 262 Epoxy, 5 mils (DFT); apply a topcoat of INTERNATIONAL Intercare to a minimum of 2 mils (DFT) to match existing color.

TOPSIDE PAINTING ZONE DESCRIPTIONS

Zone Descriptions for Topside Painting

M/V ISSAQUAH is divided into nine (9) Zones for inspection, surface preparation, painting, and bidding purposes. Not all areas in each Zone may require Work by these Specifications. Each Specification Item stands alone.

NOTE:

Prior to commencing surface preparation, the Contractor will present all areas for inspection of protective measures taken to prevent harm or damage to Vessel's equipment, other surfaces and systems.

Zone No. 1 Navigation Bridge Deck exterior surfaces, beginning at the top edge of the Curtain Plate above the Passenger Cabin windows and extending to the top of the Masts. All exterior surfaces of No. 1 and No. 2 End Pilothouses, Crew's Quarters, midship house exhaust stacks, doors, vent louvers, vent trunks, ladders (and pans where present), equipment foundations, battery boxes, deck edge coaming, navigational light screens and brackets, Pilothouse dodgers, safety equipment brackets, vestibules, Masts and all other appurtenances.

Zone No. 2 Passenger Deck exterior surfaces (outside of the Passenger Cabin) from the Passenger Deck level to the top edge of the Curtain Plate above the Passenger Cabin windows and below the Navigation Bridge Deck handrail screens. Includes all weather surfaces of both the Port and Starboard Passenger Cabin exteriors, troughs and safety handrails below the windows, overhang above the windows, drain pipes and hangers, No. 1 and No. 2 End, Promenade exteriors, No. 1 and No. 2 End Promenade interiors including all boat stations, passenger benches, No. 1 and No. 2 End Picklefork areas, all attachments and appurtenances, ladders (and pans where present), overheads, bulkheads, fire stations, doors and passenger seating.

Zone No. 3 Port and Starboard Curtain Plating from the outboard top horizontal surface of the rubrail to the Passenger Deck level and from the Curtain Plate extremes at No. 1 and No. 2 End, including the anchor stowage area and anchor, hawser pipe, fixtures, vents and louvers.

Zone No. 4 Auto (Main) Deck outboard auto lanes, Port and Starboard Curtain Plate inboard surface areas, overhead areas, inboard and thwartship bulkheads, forward Picklefork coamings, haunch girders, life jacket (PFD) lockers (interior and exterior surfaces) and the outboard Machinery Casing and overhead extending from No. 1 to No. 2 End extremes, curbing, cleats, bollards, chocks, and tie downs, light fixtures, bells, speakers, fire hose stations, fire extinguisher boxes and stations, ventilation ducting, vent louvers, piping, fueling stations, MES launching stations, vent piping, and all appurtenances.

Zone No. 5 Auto (Main) Deck Center auto lanes area extending from No. 1 to No. 2 End. This area includes the forward face of the thwartship coaming between the Pickleforks, inboard Machinery Casings surfaces, overhead, ventilation louvers, ventilation ducting, piping, curbing, light fixtures, bells, speakers, and all appendages, including all Machinery Casing vestibules.

Zone No. 6 Deck surface areas. Includes Navigation Bridge Deck, Pilothouse side and front walkways, and all housetops, Passenger Deck Promenades and Pickleforks, Auto (Main) Deck walkways and all ladders, stairways, landings, safety areas and non - skid.

Zone No. 7 Stairway vertical and overhead surfaces from Auto (Main) Deck to Passenger Deck.

Zone No. 8 Signs, stencils, markings, label plates, safety striping, and dadoes, on all interior and exterior surfaces of Zone No's 1 through 7.

Zone No. 9 Handrails, railings, screens, and gates on all decks, ladders, stairwells, companionways, walkways Auto (Main) Deck to the top of the Masts.

20. DECK DRAINS
{STRUCTURAL PRESERVATION}

A. Clean and test all weather deck drains for flow in the presence of the Vessel Staff Chief Engineer and the WSF Inspector prior to commencing with the fresh water wash.

B. Ensure that weather deck drains are securely covered during surface preparation operations.

C. Retest the weather deck drains for flow in the presence of the Vessel Staff Chief Engineer and the WSF Inspector upon completion of painting and clean up work. Plugged drains found shall be cleaned and reopened at the Contractor's expense.

21. FRESH WATER WASH
{STRUCTURAL PRESERVATION}

A. Low Pressure Water Detergent Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve a condition of SC-1 in accordance with Table 2 (Non-visual Surface Preparation Definitions) in SSPC-SP 12/NACE 5 Publication, in all Zones using Hemple Light Clean 99350-000. The wand shall be held no more then twelve inches (12") from surface being washed. The intent of this Work Item is to wash all surfaces in all Zones as described in the ZONE DESCRIPTION for Topside Painting.

B. Inspect the entire fresh water wash to the satisfaction of the WSF Inspector prior to proceeding with any surface preparation or painting.

22. PREPARATION AND PAINTING OF ZONE NO. 1 (NAV BRIDGE DECK AND ABOVE EXTERIOR SURFACES)
{STRUCTURAL PRESERVATION}

A. Remove the four (4) bolted in vent louvers under the Pilothouse side walkways (two (2) each End) and grit blast as part of Item B below. After full coating system application under Items C through G below, reinstall using new, Contractor furnished, gaskets and Type 316L stainless steel fasteners.

B. Grit blast all areas of abrasion and corrosion to SSPC-SP 6, Commercial Blast Cleaning as authorized by the WSF Inspector. Work includes removal of all bolt-on plumb vent covers, door stops, hold backs, and plug-in boxes. Reinstall all removed Items after final coat using new, Contractor furnished, Type 316L stainless steel fasteners.

NOTE:

For bidding purposes, assume that 1,000 Square Feet (SF) shall require grit blasting. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

C. Apply one (1) coat of Hempel, Hempadur epoxy 45881-1163, off white, to obtain a minimum of 6.0 mil Dry Film thickness, to grit blasted areas.

D. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Hempel, Hempadur epoxy 45881-1163.

E. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

F. Apply one (1) full tie coat of Hempel, Hempadur epoxy 45881-1163, minimum 4 mils DFT color off white to cover, on all surfaces of Zone No. 1.

G. Apply one (1) full coat Hempel, Hempathane 5595U-3000, WSF Blue White, minimum 2 mils to 3 mils DFT, to cover, on all surfaces of Zone No. 1. Colors shall be as detailed in **Attachment No. 1**, Marine Coatings and Color Scheme Specifications.

23. PREPARATION AND PAINTING OF ZONE NO. 2 (PASSENGER DECK EXTERIOR)

{STRUCTURAL PRESERVATION}

A. Prepare areas of abrasion and corrosion to SSPC-SP 6, Commercial Blast Cleaning in Zone No. 2 as authorized by WSF Inspector.

NOTE:

For bidding purposes, assume that 2000 Square Feet (SF) shall require grit blasting to SSPC-SP 6, Commercial Blast Cleaning. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

B. Apply one (1) coat of Hempel, Hempadur epoxy 45881-1163, off white, to obtain a minimum of 6.0 mil Dry Film thickness, to grit blasted areas.

C. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Hempel, Hempadur epoxy 45881-1163.

D. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

E. Apply one (1) full tie coat of Hempel, Hempadur epoxy 45881-1163, minimum 4 mils DFT color off white to cover, on all surfaces of Zone No. 2.

F. Apply one (1) full coat Hempel, Hempathane 5595U, minimum 2 mils to 3 mils DFT, to cover, on all surfaces of Zone No. 2. Colors shall be as detailed in **Attachment No. 1**.

24. PREPARATION AND PRESERVATION OF ZONE 2 (TROUGHS)

{STRUCTURAL PRESERVATION }

A. Grit blast all surfaces of Port and Starboard troughs (below passenger windows) and six inches (6") up the bulkheads from the troughs to a SSPC-SP 6, Commercial Blast Cleaning.

B. Apply one (1) coat of Hempel, Hempadur epoxy 45881-1217, gray, to obtain a minimum of 6.0 mil DFT, to grit blasted areas.

C. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Hempel, Hempadur epoxy 45881-1163.

D. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

E. Apply one (1) full tie coat of Hempel, Hempadur epoxy 45881-1163, minimum 4 mils DFT color off white to cover, on all surfaces of Zone No. 2.

F. Apply one (1) full coat Hempel, Hempathane 5595U minimum 2 mils to 3 mils DFT, to cover, on all surfaces of Zone No. 2. Colors shall be as detailed in **Attachment No. 1**.

25. PREPARATION AND PAINTING OF ZONE NO. 3 (PORT AND STBD CURTAIN PLATING)

{STRUCTURAL PRESERVATION}

A. Remove the four (4) large bolt-on vent intake louvers (two (2) each, Port and Starboard) and grit blast both the louver assemblies and inside plenum area, up to the first flange joint, to SSPC-SP 6, Commercial Blast Cleaning. After full coating system application under Items C through G below, reinstall louvers using new, Contractor furnished, gaskets and Type 316L stainless steel fasteners.

B. Prepare areas of abrasion and corrosion to SSPC-SP 6, Commercial Blast Cleaning or SSPC-11, Power Tool Cleaning to Bare Metal in Zone No. 3 as authorized by WSF Inspector.

NOTE:

For bidding purposes, assume that 2,000 Square Feet (SF) shall require preparation. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

C. Apply one (1) coat of Hempel, Hempadur epoxy 45881-1163, off white, to obtain a minimum of 6.0 mil DFT, to grit blasted areas.

D. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Hempel, Hempadur epoxy 45881-1163.

E. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

F. Apply one (1) full tie coat of Hempel, Hempadur epoxy 45881-1163, minimum 4 mils DFT color off white to cover, on all surfaces of Zone No. 3.

G. Apply one (1) full coat Hempel, Hempathane 5595U, minimum 2 mils to 3 mils DFT, to cover, on all surfaces of Zone No. 3. Colors shall be as detailed in **Attachment No. 1**.

26. PREPARATION AND PAINTING OF ZONE NO. 4 (INTERIOR STRUCTURE)

{STRUCTURAL PRESERVATION}

A. Grit blast the entire zone including inboard and outboard curbing and out approximately eighteen inches (18") of the deck area from No. 1 End to No. 2 End extremes, to SSPC-SP 6, Commercial Blast Cleaning. Work includes raising of cables in the strap type hangers and grit blasting of these wire ways.

B. Apply one (1) coat of Hempel, Hempadur epoxy 45881-1163, off white, to obtain a minimum of 6.0 mil DFT, to grit blasted areas.

C. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Hempel, Hempadur epoxy 45881-1163.

D. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

E. Apply one (1) full tie coat of Hempel, Hempadur epoxy 45881-1163, minimum 4 mils DFT color off white to cover, on all surfaces of Zone No. 4.

F. Apply one (1) full coat Hempel, Hempathane 5595U, minimum 2 mils to 3 mils DFT, to cover, on all surfaces of Zone No. 4. Colors shall be as detailed in **Attachment No. 1**.

27. PREPARATION AND PAINTING OF ZONE NO. 5

{STRUCTURAL PRESERVATION}

A. Grit blast all areas of corrosion and abrasion to SSPC-SP 6, Commercial Blast Cleaning, as authorized by the WSF Inspector.

NOTE:

For bidding purposes, assume that 2,000 Square Feet (SF) shall require grit blasting to SSPC-SP 6, Commercial Blast Cleaning. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

B. Apply one (1) coat of Hempel, Hempadur epoxy 45881-1163, off white, to obtain a minimum of 6.0 mil DFT, to grit blasted areas.

C. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Hempel, Hempadur epoxy 45881-1163.

D. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

E. Apply one (1) full tie coat of Hempel, Hempadur epoxy 45881-1163, minimum 4 mils DFT color off white to cover, on all surfaces of Zone No. 5.

F. Apply one (1) full coat Hempel, Hempathane 5595U, minimum 2 mils to 3 mils DFT, to cover, on all surfaces of Zone No. 5. Colors shall be as detailed in **Attachment No. 1**

28. PREPARATION AND PAINTING OF ZONE NO. 6 (DECKS) {STRUCTURAL PRESERVATION}

A. Grit blast the entire No. 1 and No. 2 End Passenger Deck Pickleforks and Promenade areas (to include the athwartship walkway outside and below the Promenade windows) to SSPC-SP 6, Commercial Blast Cleaning.

B. Grit blast all deck areas of active corrosion on all, Auto (Main) Deck, House tops, Pilot House tops, Navigation Deck, Midship House tops, walkways and all ladders, stairways, landings, and safety areas to an SSPC-SP 6, Commercial Blast Cleaning.

NOTE:

For bidding purposes for Item B work, assume that 3,000 Square Feet (SF) shall require blasting and painting. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

C. Apply one (1) coat of Hempel, Hempadur epoxy 45881-1217, gray, to obtain a minimum of 6.0 mil DFT, to grit blasted areas.

D. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Hempel, Hempadur epoxy 45881-1217.

E. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating let air dry.

F. Apply one (1) coat Hempel, Hempadur epoxy 45881-1217, gray, to obtain a minimum of 6.0 mil DFT, to the areas 1 day prior to applying non-skid. Provide labor, material and equipment to apply one (1) coat of Non-Skid Sherwin-Williams / American Safety AS-250 Haze Gray. Apply at 40 sq. ft. per gallon.

G. Apply one (1) full tie coat of Hempel, Hempadur epoxy 45881-1163, minimum 4 mils DFT color off white to all areas in the zone that are not non-skidded. Colors shall be as detailed in **Attachment No. 1.**

H. Apply one (1) full coat Hempel, Hempathane 5595U, minimum 2 mils to 3 mils DFT, to all areas in the zone that are not non-skidded cover. Colors shall be as detailed in **Attachment No. 1.**

I. The safety striping, MES access lane stripes and stencils and auto lane markings are to be coated with a minimum 2-3 mils DFT, to cover with, Hempel, Hempathane 5595U color as detailed in **Attachment No. 1** upon completion of the non-skid application.

29. PREPARATION AND PAINTING OF ZONE NO. 7 (STAIRWAY SURFACES)

{STRUCTURAL PRESERVATION}

A. Prepare areas of abrasion and corrosion to SSPC-SP 6, Commercial Blast Cleaning in Zone No. 7 as authorized by WSF Inspector.

NOTE:
For bidding purposes, assume that 1,000 Square Feet (SF) shall require grit blasting to SSPC-SP 6, Commercial Blast Cleaning. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

B. Apply one (1) coat of Hempel, Hempadur epoxy 45881-1217, gray, to obtain a minimum of 6.0 mil DFT, to grit blasted areas.

C. The back sides, corners and sharp edges of all angles, rat holes, scallops and beams shall be hand-striped, using the brush method, with an additional 4-8 mils (DFT) of Hempel, Hempadur epoxy 45881-1163.

D. Wash down all grit blast residues using Low Pressure Water Clean (LP WC) at 3,000 – 5,000 PSI. The intent of this Item is to wash surfaces after spot blasting and prime coating prior to top coating.

E. Apply one (1) full tie coat of Hempel, Hempadur epoxy 45881-1163, minimum 4 mils DFT color off white to cover, on all surfaces of Zone No. 7.

F. Apply one (1) full coat Hempel, Hempathane 5595U, minimum 2 mils to 3 mils DFT, to cover, on all surfaces of Zone No. 5. Colors shall be as detailed in **Attachment No. 1.**

30. PREPARATION AND PAINTING OF ZONE NO. 8 (SIGNS, LABELS AND MARKINGS) {STRUCTURAL PRESERVATION}

A. Video, map out and record all of the Vessel stencils, marks, labels, signs, placards, operating instructions, and safety striping in way of the Work in Zone No's 1 through 9, using color photos which clearly show locations and legible text. Provide one (1) complete copy of this record, in booklet form, to the WSF Inspector prior to any removals, blasting and painting. The Contractor is responsible for replacing, with new, all stencils, marks, labels, signs, placards, placard holders, sign frames, operating instructions, and safety striping, when the painting is completed. Such stencils, marks, labels, signs, placards, operating instructions, and safety striping are to be located, shaped, colored, and sized exactly as they were when the Vessel arrived at the Contractor's facility.

B. Remove all stencils, marks, labels, signs, placards and operating instructions that are fastened to the surfaces of Zone No's 1 through 9, after mapping is completed, and prior to commencing the fresh water wash. Ensure all glue, adhesive, and tape is removed from the surfaces during the fresh water wash.

NOTE:

Masking of stencils, marks, labels, signs, placards, operating instructions, and safety striping <u>will not</u> be allowed without prior written approval by the WSF Inspector.

C. Manufacture, procure, and/or paint all new stencils, marks, labels, signs, sign frames, placards, placard holders, operating instructions, safety striping and dadoes. Paint used for stencils, marks, labels, signs, placards, operating instructions, safety striping and dadoes must be compatible with the top coat on the surface where it is applied, without wrinkling, peeling, or lifting. All labeling attached with fasteners, shall have those fasteners replaced with new, Contractor furnished, Type 316L stainless steel fasteners.

31. PREPARATION AND PAINTING OF ZONE NO. 9 (HANDRAILS AND SCREENS)

{STRUCTURAL PRESERVATION}

A. Grit blast all areas of abrasion and corrosion on all handrails, railings, screens, and gates to a SSPC-SP 6, Commercial Blast Cleaning as authorized by WSF Inspector.

NOTE:

For bidding purposes, assume that 500 Square Feet (SF) shall require grit blasting and painting. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

B. Remove all deck railing/enclosure screens and all stairwell opening screens, and replace all existing mounting fasteners on all screens with new, Contractor furnished, Type 316L stainless steel fasteners, consisting of hex-head bolts, two (2) flat washers for each bolt, and nylok style nuts. Remove the eight (8) stairway screens that are welded in and replace with bolt in screens.

C. Repair all paint damaged by deck and other removals or installations in overhead of car lanes to SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of Hempel Hempadur epoxy 45811-1163, 4-8 mils DFT. Hand stripe all edges. Apply a topcoat of Hempel Hempathane 5595U, to a minimum of 2-4 mils (DFT) to match existing color.

D. Furnish and apply one (1) coat of Far West Formula 117, at 2-3 mils (DFT) to all galvanized and aluminum surfaces on hand rails, railings, gates, screens, and all other galvanized and aluminum surfaces prepared by blasting.

E. Apply one (1) coat of Hempel, Hempadur Epoxy 45881-1163 to a minimum of, 6-8 mils (DFT) on all surfaces of Zone No. 9.

F. Apply one (1) coat of Hempel, Hempathane 5595U, to obtain a minimum of, 2-4 mils (DFT), to cover, on all surfaces in Zone No. 9. Colors shall be as detailed in **Attachment No. 1**.

32. APPLICATION OF CAULKING COMPOUND {STRUCTURAL PRESERVATION}

NOTE:

Caulking compound shall be Sherwin-Williams, Stampede 1, White. Caulking compound is to be applied in accordance with the Sherwin-Williams recommendations related to surface preparation, thickness, width, and proper cure time prior to top coating with paint.

A. Apply caulking compound to all non-welded areas between all skip welds where the existing caulking is removed by grit blasting or missing.

B. Caulking shall be applied after the application of the Hempel Hempadur Epoxy 4881 and prior to the application of the Hempel, Hempathane 5595U as the topcoat.

NOTE:

For bidding purposes, assume that 12,000 Lineal Feet (LF) of caulking shall be required for this Work Item. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF.

33. POWER TOOL CLEANING TO BARE METAL {STRUCTURAL PRESERVATION}

A. Prepare various areas throughout Zone No's 1 through 9 to an SSPC-SP 3, Power Tool Cleaning as directed by the WSF Inspector.

NOTE:

For bidding purposes, assume that 6,000 Square Feet (SF) shall require SSPC-SP 3, Power Tool Cleaning and shall be coated with Sherwin-Williams, Seaguard 5000HS or 6000LT, Off White, to obtain a minimum of, 4-8 mils (DFT). Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

34. PREPARATION AND PAINTING OF LANDING LIGHTS AND FIRE EQUIPMENT

{STRUCTURAL PRESERVATION}

A. Remove the landing lights from the house fronts, and all fire equipment cabinets, boxes, and apparatus, on the Navigation Bridge Deck, Passenger Deck, and Auto Deck for preparation and painting of the mountings. Prepare all mounts to a SSPC-SP 6, Commercial Blast Cleaning. Reinstall all removed Items following preparation and painting, using new, Contractor furnished, Type 316L stainless steel fasteners and nylok style nuts.

B. Prepare all paint deteriorated surfaces of fire equipment cabinets, boxes, and apparatus, to SSPC-SP 3, Power Tool Cleaning.

C. Furnish and apply one (1) coat of Hempel, Hempathane 45881-1163, Off White, to obtain a minimum of, 4-8 mils (DFT) to all prepared surfaces. Apply one (1) coat Hempel Hempathane 5595U, 2-4 mils DFT, to cover, on all surfaces. Color same as existing.

35. WEIGHT CONTROL

{MAJOR MECHANICAL}

A. The Contractor shall document weight changes and centers of gravity throughout the execution of work.

B. At the pre-arrival conference the Contractor shall prepare and submit to WSF for approval, a plan for monitoring weight and center information for all weights added, removed and relocated during this Vessel availability. This plan will address individuals, equipment and techniques to be used in the weight control process including the following points:

1. Certification of weighing facilities.
2. Where (location) the weighing will be accomplished.
3. If software is to be used, identify the software.
4. A sample data sheet showing date and time of weighing, the individual responsible for the activity, material identification, unit weight, quantity, center of gravity, and final disposition of the material (i.e. added, removed or relocated).

C. Data sheets generated by the approved process shall be submitted to WSF with progress invoices. Progress payments WILL NOT be made until all of the required weight control records have been reviewed by the WSF Representative.

(END)